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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,755	03/13/2000	Peter Heinrich	218TG/48722	6637

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EXAMINER

CHAWAN, SHEELA C

ART UNIT PAPER NUMBER

2625

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/524,755

Applicant(s)

HEINRICH ET AL.

Examiner

Sheela C Chawan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23- 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/28/03, 3/13/00.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Amendment

2. Applicant's amendment filed on 9/13/04 has been entered.

Response to Arguments

3. Applicant's arguments filed on 9/13/04 have been fully considered but are deemed to be moot in view of the new grounds of rejection.

Previous claims 1-22 canceled.

New claims are added 23 – 38.

Specification

4. The disclosure is objected to because of the following informalities:

Page1, line 2, change "precessing ", to -- processing -- .

Appropriate correction is required.

Drawings

5. The drawings are objected to because of draftsperson's remarks (see attached PTO-948 11/18/04. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Request For Continued Examination

6. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 1935 Comm'r Dec. 11 (1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application 09/524,755 has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 9/13/04 has been entered.

Claim Rejections - 35 U.S.C. § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-24,27,29,30,33,36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Ivanov et al., (US. 5,489,820).

As to claim 23, Ivanov discloses a thermal spray coating method (abstract), comprising the steps:

recording of images (fig 1, 9 corresponds to recording unit) of at least one of a plasma jet and a particle jet (note, plasma refers to an assembly of ions, electrons, neutral atoms and molecules in which particle motion is governed primarily by electromagnetic forces or field, column 1, lines 10- 26, column 2, lines 18- 25);

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assigning the images of at least one of the plasma jet and the particle jet from at least one region of equal intensity (column 2, lines 18- 46) or at least one region within a particular intensity level to one or more symmetric geometrical surface regions by computer processing (column 1, lines 11-18, column 5, lines 25- 49) or encoding.

As to claim 24, Ivanov discloses the method, wherein said one or more symmetric geometrical surface regions of the image are recorded as data records based on typical characteristics for the respective geometrical shape and at least one of recording (column 1, lines 11-18, column 5, lines 25- 49), controlling and monitoring at least one of the characteristics of thermal spray coating method effecting the quality of the coating layer as a function of said data record (column 2, lines 33-46, 57- 67).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25, 26, 31, 32, 28, 34, 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ivanov et al., (US. 5,489,820), as applied to claims 23-24, above and further in view of Gruner et al., (US.4,661,682).

Regarding claim 25 and 30, Ivanov discloses a method for controlling a plasma stream formed by plasma-forming jets which would allow one to obtain preset physical parameters of the total plasma stream. Ivanov discloses characterized in that a magnetic system is used for superposing magnetic fields on the current conducting plasma jets. This procedure makes it possible to change the characteristics of the plasma stream, such as its shape, size, and the position of the plasama of the plasma jets, by varying the magnetic field intensity. Ivanov is silent about symmetric geometrical surface region is selected from one or more of circles, squares, rectangles, parallelograms and ellipses.

Gruner discloses a plasma spray gun is the coating of contact surface of the blade roof and turbine disc within the holder grooves of the turbine disc in the case of aircraft gas turbine engines. The system comprises of:

wherein the symmetric geometrical surface region (fig 5 and 6, zone 1 and zone 2 corresponds to surface or region, column 4, lines 10-18) is selected from one or more of circles, squares, rectangles, parallelograms and ellipses (column 1, lines 58-66, column 12, lines 28- 40, column 5, lines 15-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Ivanov to include symmetric geometrical surface region is selected from one or more of circles, squares, rectangles, parallelograms and ellipses. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Ivanov by the teaching of Gruner in order to produces a strong increase in the geometrical efficiency based on the spray jet diameter as well as to an equalized thickness of the sprayed layer during each spraying passage (as suggested by Gruner at column 1, lines 60 - 66).

As to claim 26, Gruner discloses the method, wherein the symmetric geometrical surface region is an ellipse (fig 5 and 6, zone 1 and zone 2 corresponds to surface or region, column 4, lines 10-18, column 1, lines 58-66, column 12, lines 28- 40, column 5, lines 15-34).

As to claims 27, 31 and 32, Ivanov discloses the method, wherein independent typical characteristics are recorded (fig 1, 9 corresponds to recording unit) as a data record for the respective geometrical shape (column 1, lines 11- 26, column 5, lines 25- 49, column 2, lines 18-25, 57- 67).

As to claims 28, 33-35, Ivanov discloses the method, wherein the computer processing and/or encoding occurs by means of a contour detection algorithm, by means of a gradient steps representation and/or a gradient accentuating representation reduced to bit planes (column 5, line 42 through column 6, line 36).

As to claims 29, 36- 38, Ivanov discloses the method, wherein at least one characteristic of the thermal spray coating method affecting the quality of the coating

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layer relates to the spray coating method and/or the spraying device (note, spraying device corresponds to plasma jet (column 7, line 41 through column 8, line 39).

Other prior art cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sahoo et al., (US.5,518,178) discloses thermal spray nozzle method for producing rough thermal spray coatings and coatings produced.

Witherspoon et al., (US.6,001,426) discloses high velocity pulsed wire-Arc spray.


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Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 703-305- 4876. The examiner can normally be reached on Monday - Thursday 8 - 6.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheela Chawan
Patent Examiner
Group Art Unit 2625
November 17, 2004